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**REMARKS**

It is unclear which of Applicant's past responses the Examiner is using as the basis for this Office Action. In the Examiner's note of the current Office Action, the Examiner states that the current Office Action is in response to an Amendment After Final dated September 16, 2002. Applicant knows of no such amendment. The Final Office Action (the Office Action immediately preceding this one) that was received from the Examiner had a date of October 30, 2002, and a response was submitted to that Action on March 26, 2003. Thus, it is unclear. None of the prior communications with the Examiner had a date of September 16, 2002. Does the Examiner mean to say that the current Office Action is in response to the March 26, 2003 Amendment After Final? Clarification is needed as to which Amendment the Examiner is responding to, so that the Applicant will have an accurate understanding of the status of the claims and any amendments thereto as they now stand.

Applicant is proceeding on the assumption that this Office Action by the Examiner is in response to Applicant's Amendment After Final, dated March 26, 2003. If this is not the case, Applicant respectfully requests notification of such.

On page 2, numbered paragraph 3 of the Office Action, the Examiner objected to claim 1 because of the language "at least on." The Applicant has amended claim 1 per the Examiner's requirement, so that it now reads "at least one."

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On page 2, numbered paragraph 5, the Examiner rejected claim 1 under 35 USC 112, second paragraph, as being indefinite for failing to point out and distinctly claim the subject matter which the Applicant regards as the invention. Specifically, the Examiner objects to the statement "preferably the UV stabilizer." Applicant has further amended claim 1, so that the necessary clarification is now believed to be included in the claim text. The claim now reads "...where at least the flame retardant and also the UV stabilizer is provided as a compounded first masterbatch ..."

On page 3, numbered paragraph 6 of the Office Action, the Examiner rejects claim 11 under 35 USC 112, second paragraph, as being indefinite for failing to point out and distinctly claim the subject matter which the Applicant regards as the invention. Specifically, the Examiner states that there is no antecedent basis for the claim limitation "crystallizable polyethylene terephthalate." Applicant has amended claim 11 so that the limitation now reads "crystallizable thermoplastic." Sufficient antecedent basis for this amended limitation can be found in claim 1, from which claim 11 depends.

On page 3, numbered paragraph 7 of the Office Action, the Examiner rejects claims 1 – 2, and 4 – 8 as being unpatentable over Murschall et al. (DE 19,630,599 A1) in view of Oishi et al. (US Pat, No. 5,936,048). The Examiner states that it would be obvious to one of ordinary skill in the art to modify the polyethylene terephthalate film taught by Murschall et al. by including 5 – 40% of a flame retardant such as DMMP as taught by Oishi et al. The Examiner then takes the position that it would have been obvious to one of ordinary skill in the art at the

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time the invention was made to tailor the haze and yellowness properties of this modified film in order to meet the optical requirements of a particular application. This rejection is respectfully traversed.

German patent #DE19630599A1 cited by the Examiner discloses a polyethylene terephthalate cast sheet containing UV stabilizers and phosphorus stabilizing compounds. However, there are several key differences between the '599 patent and the current invention that render the '599 Murschall reference inapplicable: the '599 Murschall reference concerns PET boards (cast sheets, non-oriented, 0.8-20 mm thick); and the '599 reference appears to contain no reference to either organic phosphorus compounds or any other material as a flame retardant in German patent '599.

The '599 reference that the Examiner cites as the basis for this rejection concerns PET boards or cast sheets that are non-oriented and have a thickness of 0.8-20 mm. These cast sheets are generally thermoformed into applications such as moldings and casings. The thickness these cast sheets reflects their use as such, and the general inapplicability of cast sheets for use in film applications. At thicknesses of up to almost one inch, these cast sheets can hardly still be classified as laminate films. However, in an effort to further differentiate the current film invention from the '599 cast sheet, the Applicant has amended claim 1 so as to limit the thickness of the claimed film to 5-300  $\mu\text{m}$ .

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The Murschall reference that the Examiner is citing has to do solely with cast sheets that are unoriented. The current invention utilizes oriented film, and is still able to maintain a low degree of yellowness. While this difference may seem inconsequential at first, after examining the process used to orient the film, one skilled in the art can easily appreciate the merits of the current invention that are not obvious in view of Murschall.

Yellowing in the creation of polymeric films largely occurs due to a scorching of the polymer, which occurs when heating the film. However, heating of the film is necessary at some points in the production process. Polycondensation generates quite a bit of heat that can yellow the polymer. Extruding the polymer into sheets requires heating the polymer to its melting point. Orienting the film also involves heating a film to its glass transition point, and then stretching it to orient the film molecules in a given direction. Many films are oriented in both the MD and TD directions, and while some manufactures are capable of orienting in both planes simultaneously, this is mostly done in two separate steps. Typically, the film is first heated and oriented in the MD direction, and then cooled. The same film is then reheated and oriented in the TD direction, and thereafter cooled. Additionally, oriented films have to be heat set after the orientation process. This again requires the heating of the film.

It is therefore surprising that the Applicant is able to achieve such a low yellowness index while creating an oriented film. The Murschall reference cited by the examiner shows good yellowness, however it is in an unoriented film. The Applicant has achieved a low yellowness index while going through a minimum of 2 and more likely 3 heatings of the film, twice for the

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orientation, and once for the final heat setting. Thus, one skilled in the art would expect a film that has been heated and reheated so many additional times to exhibit a higher yellowness index than which is seen in the current invention. The fact that the Applicant is able to achieve such a low yellowness index in the oriented film is highly surprising. The fact that the Murschall reference was able to achieve good yellowness index values, is not remarkable. The Murschall reference again dealt with sheet casted unoriented films, and did not undergo the additional heatings that are required to be applied to the oriented film of the current invention.

Thus, when speaking to the yellowness index, the Examiner cannot fairly compare the unoriented film of the Murschall reference with the oriented film of the current invention. While the reference may indeed exhibit good yellowness properties, the steps involved in making the unoriented film make this result much more attainable than would be seen in an oriented film.

Additionally, the '599 patent appears to have no reference to any phosphorus containing flame-retardants. What the Examiner fails to recognize is that the inclusion of additives such as phosphorus-based flame-retardants into the polymer matrix has a significant yellowing effect on the color of the polymer. This is not a variable that one skilled in the art seeks to adjust based on the application of the specific film. Rather, the yellowness index is an undesirable inherent property of the film that inventors have been trying to eliminate. It is unsightly, and because of this lack of visual appeal it will not be readily marketable. No one wants to buy it. While German patent '599 does disclose a film having good optical properties, there does not appear to be any discussion of limitations on the degree of yellowness or haze inherent to the film. The

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UV stabilizers and flame retardant phosphorus compounds within the crystallizable thermoplastic have an adverse effect on the optical properties. Being able to obtain a film with the long-term stability due to the introduction of additional components into the masterbatch while still retaining a low degree of haze and yellowness is a very surprising result.

This yellowing problem is inherent in the prior art when phosphorus-based flame-retardants are added into the polymer matrix. Oishi et al. make no mention of the yellowness index of their disclosed film for precisely this reason. If Oishi et al. were able to include the phosphorus-based flame-retardants in their film without significant yellowing, they would have most certainly disclosed that fact. One of ordinary skill in the art would have recognized the achievement of being able to produce a film with such a high degree of transparency, and would have disclosed and claimed it in any patent filed thereon. The fact that Oishi et al. make no mention of transparency in the '048 patent is evidence that they were unable to achieve this highly desirable characteristic in their film.

In making an obviousness rejection based on the combination of Murschall with Oishi, the Examiner is oversimplifying the problem. Murschall discloses a film that does not include flame-retardants in the polymer matrix. Because of this, it would be expected to have a higher degree of transparency than would a film that has flame-retardants added to it. The Examiner makes the mistake of assuming that the Murschall film would retain its low yellowness index even with the addition of the flame-retardants as disclosed by Oishi. This simply is not the case. The inclusion of flame-retardants into a film causes a corresponding increase in the yellowness

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index. While a person of ordinary skill in the art would definitely try to minimize this effect, based on the level of skill in the art, that person would be unsuccessful at achieving a film such as the present invention where the yellowness index is dramatically lower than what would otherwise be expected. The fact that the present inventors were able to achieve a flame retardant film with such a high degree of transparency is unquestionably surprising and unexpected.

On page 8 numbered paragraph 24, the Examiner rejects claim 3 under 35 USC 103(a) as being unpatentable over Murschall et al. (DE 19,630,599 A1) in view of Oishi et al. (US Pat, No. 5,936,048), and in further view of Rakos et al. (U.S. Pat. No. 6,251,505). Specifically, the Examiner states that it would have been obvious to one of ordinary skill in the art at the time that the invention was made to coat the PET film disclosed by Murschall as modified by Oishi with an adhesion promoting coating, as taught by Rakos. In light of the arguments that Applicant has put forth above in response to the Examiner's rejection of claims 1 - 2, and 4 - 8 over Murschall in view of Oishi, it is now believed that this rejection of claim 3 as set forth by the Examiner is respectfully traversed. The above arguments are equally applicable to claim 3 in the present rejection, since the Examiner cites to Murschall as modified by Oishi as in the rejection above. The new Rakos reference is cited only to show what has been known in the art for some time; that is to include an adhesion promoting coating between 2 layers of the resulting film. However, because Applicant believes that independent claim 1 is now in condition of allowance, dependant claim 3 should also be given such favorable action as being properly dependent from an otherwise allowable independent claim.

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On page 8 numbered paragraph 29 of the Office Action, the Examiner rejects claims 9 – 10 under 35 USC 103(a) as being unpatentable over Murschall et al. (DE 19,630,599 A1) in view of Oishi et al. (US Pat, No. 5,936,048), and in further view of Schreck et al. (U.S. Pat. No. 5,866,246) and Kishida et al. (U.S. Pat. No. 5,008,313). Specifically, the Examiner states that it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate 0.05 – 2% of a metal stearate/carbonate, alkali earth-metal stearate/carbonate, or a phenolic stabilizer as described by Schreck et al. to the multilayer film described by Murschall as modified by Oishi et al. In light of the comments to the above rejections, and the amendments to independent claim 1, this rejection is also traversed.

It should also be pointed out that the Schreck reference cited by the Examiner makes use of vacuoles (see abstract) to achieve an opaque property to the film. These vacuoles should be avoided in the production of the current film, and as such, the present application makes no mention of them. A film that contains vacuoles as described by Schreck would not have the desired transparent properties that are needed in the current invention.

On page 10 numbered paragraph 34 of the Office Action, the Examiner rejects claims 1, 7, 9, and 11 under 35 USC 103(a) as being unpatentable over Murschall et al. (DE 19,630,599 A1) in view of Schreck et al. (U.S. Pat. No. 5,866,246), Kishida et al. (U.S. Pat. No. 5,008,313), and Ragan et al (U.S. Pat. No. 4,551,485). The Examiner states that it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate .05 – 2% of a metal stearate/carbonate, alkali earth-metal stearate/carbonate, or a phenolic stabilizer as



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described by Schreck et al. to the multilayer film described by Murschall as modified by Oishi et al. In light of the comments to the above rejections, and the amendments to independent claim 1, this rejection is also traversed.

Examiner has also stated that Claims 13 - 18 were improperly canceled in a previous amendment. Applicant has canceled these claims under an appropriate heading.

In light of the amendments to independent claim 1 and the comments hereto, it is suggested that the references cited by the Examiner's for these rejections no longer disclose or fairly anticipate all the limitations as set forth in independent claim 1. Independent claim 1 and the properly dependent claims stemming from it are now believed to be in a condition of allowance. Such favorable action is respectfully requested.

Respectfully submitted,



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